INTERPRETATION OF MAGNETIC ANOMALY REDUCE TO THE POLE
AT WAY RATAI GEOTHERMAL AREA

Abstract

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Magnetic study at Way Ratai geothermal area have been done, with purpose to obtained geological 3D model of Way Ratai geothermal area and mapping reservoir boundaries. This research do boundary at 1.4 km x 1.4 km with distribution data are 100. Magnetic methode used in this research because this method are according to research process hydrothermal magnetic. This method are sensitive towards vertical variation. The general use hydrothermal nerves which the rich are ferromagnetic mineral and geology structure. This research begin from measurements of field magnetic, data reduction and processing to obtain magnetic anomaly. Before to get magnetic anomaly, the data corrected towards Day Variation and IGRF. So to get magnetic anomaly. After that, upward continuation with apply at magnetic anomaly in order to easily interpretation. 3D magnetic inversion modeling program interpretation was applied to obtained the subsurface structure from magnetic anomaly. From magnetic data processing shown that value of magnetic anomaly in this area are about -500nT to 20 nT. High magnetic anomaly located at South area and low magnetic anomaly located at the center area. Geothermal manifestation at this area are located at low magnetic anomaly. From 3D magnetic inversion shown a different susceptibility indicated the type of rock in this area such as : Basalt, Limestone, and Sandstone. Heat source of geothermal system Way Ratai, estimated to come from Mount Ratai, where hot water flow from mount of Ratay through to the cracks of rocks.

Key words : Interpretation, Magnetic, Subsurface, Way Ratai